

SEQUENCE LISTING

<110> Curtis, Rory A.J.

<120> 58297, AN AMINO ACID TRANSPORTER AND
USES THEREFOR

<130> MPI2001-010P1R(M)

<150> 60/262,515

<151> 2001-1-18

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gagaaaa atg gca aat atg aat agt gat tct agg cat ctt ggc acc tct 169
      Met Ala Asn Met Asn Ser Asp Ser Arg His Leu Gly Thr Ser
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Glu Val Asp His Glu Arg Asp Pro Gly Pro Met Asn Ile Gln Phe Glu 30
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cca tcg gat cta aga tcc aaa agg cct ttc tgt ata gag ccc aca aac 265
Pro Ser Asp Leu Arg Ser Lys Arg Pro Phe Cys Ile Glu Pro Thr Asn 45
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atc gtg aat gtg aat cat gtc att cag agg gtt agt gac cat gcc tct 313
Ile Val Asn Val Asn His Val Ile Gln Arg Val Ser Asp His Ala Ser 60
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Ala Met Asn Lys Arg Ile His Tyr Tyr Ser Arg Leu Thr Pro Ala 75
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Asp Lys Ala Leu Ile Ala Pro Asp His Val Val Pro Ala Pro Glu Glu 80
      80          85          90

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tgc tat gtg tat agt cca ttg ggc tct gct tat aaa ctt caa agt tac 457
Cys Tyr Val Tyr Ser Pro Leu Gly Ser Ala Tyr Lys Leu Gln Ser Tyr 110
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act gaa gga tac ggt aaa aac acc agt tta gta acc att ttt atg att 505
Thr Glu Gly Tyr Gly Lys Asn Thr Ser Leu Val Thr Ile Phe Met Ile 125
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atg ttt tca ttg gat acc act acc tgg gaa tat cca gat gtc tgc aga Met Phe Ser Leu Asp Thr Thr Thr Trp Glu Tyr Pro Asp Val Cys Arg 175 180 185 190	697
cat tat ttc ggc tcc ttt ggg cag tgg tgc agt ctc ctc ttc tcc ttg His Tyr Phe Gly Ser Phe Gly Gln Trp Ser Ser Leu Leu Phe Ser Leu 195 200 205	745
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Arg Val Gln Leu Leu Gly His Ile Phe Gly Asp Ile Tyr Pro Ser Ile
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Ala Ala Cys Gly Leu Ala Phe Val Phe Ile Tyr Pro Ser Leu Ile Tyr
515 520 525

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Ile Ile Ser Leu His Gln Glu Glu Arg Leu Thr Trp Pro Lys Leu Ile
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Phe Phe Met
560

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35 40 45
Asn Val Asn His Val Ile Gln Arg Val Ser Asp His Ala Ser Ala Met
50 55 60
Asn Lys Arg Ile His Tyr Tyr Ser Arg Leu Thr Thr Pro Ala Asp Lys
65 70 75 80
Ala Leu Ile Ala Pro Asp His Val Val Pro Ala Pro Glu Glu Cys Tyr

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Thr	Met	Met	Gly	115	Thr	Ser	Ile	Leu	Val	120	Ser	Ile	Pro	Thr	Gly	125	Ile	Lys
Ala	Gly	Phe	Thr	130	Gly	Met	Cys	Val	Ile	135	Ile	Ile	Leu	Met	Gly	140	Leu	Leu
145	Thr	Leu	Tyr	150	Cys	Tyr	Arg	Val	Val	155	Lys	Ser	Arg	Thr	Met	160	Met	Phe
Ser	Leu	Asp	Thr	165	Thr	Trp	Glu	Tyr	170	Pro	Asp	Val	Cys	Arg	His	175	Thr	Tyr
Phe	Gly	Ser	Phe	180	Gly	Gln	Trp	Ser	185	Ser	Leu	Leu	Phe	Ser	Leu	190	Val	Ser
Leu	Ile	Gly	Ala	195	Met	Ile	Val	Tyr	200	Trp	Val	Leu	Met	Ser	Asn	205	Phe	Leu
Phe	Asn	Thr	Gly	210	Lys	Phe	Ile	Phe	215	Asn	Phe	Ile	His	His	Ile	220	Asn	Asp
225	Thr	Asp	Thr	230	Leu	Ser	Thr	Asn	235	Asn	Ser	Asn	Pro	Val	Ile	240	Cys	Pro
Ser	Ala	Gly	Ser	245	Gly	Gly	His	Pro	250	Asp	Asn	Ser	Ser	Met	Ile	255	Phe	Tyr
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Arg	Thr	Val	Pro	275	Phe	Tyr	Leu	Val	280	Gly	Leu	Leu	Leu	Pro	Leu	285	Leu	Asn
305	Phe	Lys	Ser	290	Ser	Phe	Phe	Ser	295	Lys	Phe	Asn	Ile	Leu	Gly	300	Thr	Val
Ser	Val	Leu	Tyr	310	Leu	Ile	Phe	Leu	315	Val	Thr	Phe	Lys	Ala	Val	320	Arg	Leu
Gly	Phe	His	Leu	325	Glu	Phe	His	Trp	330	Phe	Ile	Pro	Thr	Glu	Phe	335	Phe	Val
Pro	Glu	Ile	Arg	340	Phe	Gln	Phe	Pro	345	Gln	Leu	Thr	Gly	Val	Leu	350	Thr	Leu
Ala	Phe	Phe	Ile	355	His	Asn	Cys	Ile	360	Ile	Thr	Leu	Leu	Lys	Asn	365	Asn	Lys
Lys	Gln	Glu	Asn	370	Asn	Val	Arg	Asp	375	Leu	Cys	Ile	Ala	Tyr	Met	380	Leu	Val
385	Thr	Leu	Thr	390	Leu	Tyr	Ile	Gly	395	Val	Leu	Val	Phe	Ala	Ser	400	Phe	Pro
Ser	Pro	Pro	Leu	405	Ser	Lys	Asp	Cys	410	Glu	Gln	Asn	Phe	Leu	Asp	415	Asn	Asn
Phe	Pro	Ser	Ser	420	Asp	Thr	Leu	Ser	425	Phe	Ile	Ala	Arg	Ile	Phe	430	Leu	Leu
Phe	Gln	Met	Met	435	Thr	Val	Tyr	Pro	440	Leu	Leu	Gly	Tyr	Leu	Ala	445	Arg	Val
Gln	Leu	Leu	Gly	450	His	Ile	Phe	Gly	455	Asp	Ile	Tyr	Pro	Ser	Ile	460	Phe	His
465	Val	Leu	Val	470	Leu	Leu	Ile	Ile	475	Val	Gly	Ala	Gly	Val	Ile	480	Met	Ala
Cys	Phe	Tyr	Pro	485	Asn	Ile	Gly	Gly	490	Ile	Arg	Tyr	Ser	Gly	Ala	495	Ala	Ala
Ser	Gly	Leu	Ala	500	Phe	Val	Phe	Ile	505	Tyr	Pro	Ser	Leu	Ile	Tyr	510	Ile	Ile
Cys	Leu	His	Gln	515	Glu	Glu	Arg	Leu	520	Thr	Trp	Pro	Lys	Leu	Phe	525	His	Phe
530	Val	Phe	Ile	535	Ile	Leu	Gly	Val	540	Ala	Asn	Leu	Ile	Val	Gln	545	Phe	His
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gat cta aga tcc aaa agg cct ttc tgt ata gag ccc aca aac atc gtg	144
Asp Leu Arg Ser Lys Arg Pro Phe Cys Ile Glu Pro Thr Asn Ile Val	
35 40 45	
aat gtg aat cat gtc att cag agg gtt agt gac cat gcc tct gcc atg	192
Asn Val Asn His Val Ile Gln Arg Val Ser Asp His Ala Ser Ala Met	
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aac aag aga att cat tac tac agc cgg ctc acc act cct gca gac aag	240
Asn Lys Arg Ile His Tyr Tyr Ser Arg Leu Thr Thr Pro Ala Asp Lys	
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gca ctg att gcc cca gac cat gta gtt cca gct cca gaa gag tgc tat	288
Ala Leu Ile Ala Pro Asp His Val Val Pro Ala Pro Glu Glu Cys Tyr	
85 90 95	
gtg tat agt cca ttg ggc tct gct tat aaa ctt caa agt tac act gaa	336
Val Tyr Ser Pro Leu Gly Ser Ala Tyr Lys Leu Gln Ser Tyr Thr Glu	
100 105 110	
gga tac ggt aaa aac acc agt tta gta acc att ttt atg att tgg aat	384
Gly Tyr Gly Lys Asn Thr Ser Leu Val Thr Ile Phe Met Ile Trp Asn	
115 120 125	
acc atg atg gga aca tct ata cta agc att cct tgg ggc ata aaa cag	432
Thr Met Met Gly Thr Ser Ile Leu Ser Ile Pro Trp Gly Ile Lys Gln	
130 135 140	
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145 150 155 160	
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Thr Leu Tyr Cys Cys Tyr Arg Val Val Lys Ser Arg Thr Met Met Phe	
165 170 175	
tca ttg gat acc act acc tgg gaa tat cca gat gtc tgc aga cat tat	576
Ser Leu Asp Thr Thr Trp Glu Tyr Pro Asp Val Cys Arg His Tyr	
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ttc ggc tcc ttt ggg cag tgg tgc agt ctc ctc ttc tcc ttg gtg tct	624
Phe Gly Ser Phe Gly Gln Trp Ser Ser Leu Leu Phe Ser Leu Val Ser	
195 200 205	
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Leu Ile Gly Ala Met Ile Val Tyr Trp Val Leu Met Ser Asn Phe Leu	
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Phe Asn Thr Gly Lys Phe Ile Phe Asn Phe Ile His His Ile Asn Asp	
225 230 235 240	
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	275						280					285				
agg	aca	gtc	ccc	ttt	tat	ctt	gta	ggg	ctc	ctc	ctc	cca	ctg	ctc	aat	912
Arg	Thr	Val	Pro	Phe	Tyr	Leu	Val	Gly	Leu	Leu	Leu	Pro	Leu	Leu	Asn	
	290					295					300					
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Phe	Lys	Ser	Pro	Ser	Phe	Phe	Ser	Lys	Phe	Asn	Ile	Leu	Gly	Thr	Val	
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Ser	Val	Leu	Tyr	Leu	Ile	Phe	Leu	Val	Thr	Phe	Lys	Ala	Val	Arg	Leu	
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Pro	Glu	Ile	Arg	Phe	Gln	Phe	Pro	Gln	Leu	Thr	Gly	Val	Leu	Thr	Leu	
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Thr	Leu	Thr	Tyr	Leu	Tyr	Ile	Gly	Val	Leu	Val	Phe	Ala	Ser	Phe	Pro	
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tca	cca	cca	tta	tcc	aaa	gat	tgt	att	gag	cag	aat	ttt	tta	gac	aac	1296
Ser	Pro	Pro	Leu	Ser	Lys	Asp	Cys	Ile	Glu	Gln	Asn	Phe	Leu	Asp	Asn	
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Gln	Leu	Leu	Gly	His	Ile	Phe	Gly	Asp	Ile	Tyr	Pro	Ser	Ile	Phe	His	
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Val	Leu	Val	Leu	Asn	Leu	Ile	Ile	Val	Gly	Ala	Gly	Val	Ile	Met	Ala	
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Cys	Phe	Tyr	Pro	Asn	Ile	Gly	Gly	Ile	Ile	Arg	Tyr	Ser	Gly	Ala	Ala	
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Cys	Gly	Leu	Ala	Phe	Val	Phe	Ile	Tyr	Pro	Ser	Leu	Ile	Tyr	Ile	Ile	
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Glu Glu Glu Gly Glu Tyr Val Pro Gly Lys Arg Glu Gly Ala Lys Ser			
50 55 60			
Tyr Leu Asp Leu Gly Arg Gln Ser Ala Tyr Gly Lys Gly Leu Leu			
65 70 75			
Leu Thr Ser Phe Val Gly Thr Gly Val Gln Tyr Val Asn Leu Phe Gly			
85 90 95			
Val Asn Ile Gly Tyr Leu Ile Leu Ala Gly Asp Leu Leu Pro Lys Ile			
100 105 110			
Ile Ser Ser Phe Leu Cys Phe Leu Leu Ile Gln Val Gly Asp Asn Val			
115 120 125			
Gly Val Ser Gly Asp Ile Gly Cys Asp Leu Leu Ser Gly Asn Ser Trp			
130 135 140			
Ile Ile Ile Phe Ala Ala Ile Ile Ile Thr Pro Leu Ser Phe Ile Pro			
145 150 155			
Ala Phe Asn Leu Leu Ser Ala Ser Asn Leu Ser Leu Ser Val Leu			
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180 185 190			
Ile Ser Phe Leu Ile Val Val Ala Val Ile Ala Gly Ile Phe Val Leu			
195 200 205			
Leu Gly Ala Val Tyr Lys Ile Leu Trp Ser Val Glu Thr Leu Ala Val			
210 215 220			
Thr Val Pro Ser Val Thr Lys Leu Thr Gly Leu Phe Leu Ala Ile Gly			
225 230 235			
Ile Ile Val Phe Ala Phe Glu Gly His Ala Val Leu Leu Pro Ile Gln			
245 250 255			
Asn Thr Met Lys Ser Pro Ser Glu Pro Glu Phe Lys Lys Phe Lys Lys			
260 265 270			
Val Leu Asn Val Ala Ile Ile Ile Val Thr Val Leu Tyr Ile Leu Val			
275 280 285			
Gly Phe Val Gly Tyr Leu Thr Phe Gly Asn Ser Val Lys Asp Asn Ile			
290 295 300			
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305 310 315			
Asn Leu Asn Leu Val Val Ala Ile Leu Leu Thr Phe Pro Leu Gln Cys			
320 325 330			
His Pro Val Phe Ala Phe Pro Ile Val Arg Ile Leu Glu Asn Lys Leu			
335 340 345			
Lys Arg Arg Phe Asp Asn Asn Lys Leu Leu Thr Lys Lys Asn Asn Phe			
350 355 360			
Ala Pro Lys Asn Thr Gly Asp Pro Lys Ser Lys Leu Leu Arg Val Val			
365 370 375			
Ile Arg Ser Gly Leu Val Val Val Thr Leu Leu Ile Ala Ile Leu Val			
380 385 390			
Pro Phe Leu Gly Asp Leu Leu Ser Leu Val Gly Ala Thr Ser Gly Ala			
395 400 405			
	410	415	

Pro Leu Thr Phe Ile Leu Pro Pro Leu Phe Glu Met Tyr Ile Leu Leu
 420 425 430
 Lys Lys Glu Lys Lys Trp Gly Lys Gly Glu Lys Pro Lys Glu Val Leu
 435 440 445
 Arg Arg Trp Pro Lys Leu Ile Asp Leu Ile Ile Val Val Gly Leu
 450 455 460
 Leu Leu Ser
 465

<210> 5
 <211> 505
 <212> PRT
 <213> Mus musculus

<400> 5
 Met Glu Ile Pro Arg Gln Thr Glu Met Val Glu Leu Val Pro Asn Gly
 1 5 10 15
 Lys His Leu Glu Gly Leu Leu Pro Val Gly Val Pro Thr Thr Asp Thr
 20 25 30
 Gln Arg Thr Glu Asp Thr Gln His Cys Gly Glu Gly Lys Gly Phe Leu
 35 40 45
 Gln Lys Ser Pro Ser Lys Glu Pro His Phe Thr Asp Phe Glu Gly Lys
 50 55 60
 Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile Met Gly
 65 70 75 80
 Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala Asn Thr Gly Ile Ile
 85 90 95
 Leu Phe Leu Phe Leu Leu Thr Ala Val Ala Leu Leu Ser Ser Tyr Ser
 100 105
 Ile His Leu Leu Leu Lys Ser Ser Gly Ile Val Gly Ile Arg Ala Tyr
 115 120
 Glu Gln Leu Gly Tyr Arg Ala Phe Gly Thr Pro Gly Lys Leu Ala Ala
 130 135 140
 Ala Leu Ala Ile Thr Leu Gln Asn Ile Gly Ala Met Ser Ser Tyr Leu
 145 150 155 160
 Tyr Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gln Thr Phe Leu Asn
 165 170 175
 Leu Glu Lys Pro Ala Ser Val Trp Tyr Met Asp Gly Asn Tyr Leu Val
 180 185 190
 Ile Leu Val Ser Val Thr Ile Ile Leu Pro Leu Ala Leu Met Arg Gln
 195 200 205
 Leu Gly Tyr Leu Gly Tyr Ser Ser Gly Phe Ser Leu Ser Cys Met Val
 210 215 220
 Phe Phe Leu Ile Ala Val Ile Tyr Lys Lys Phe Gln Val Pro Cys Pro
 225 230 235 240
 Leu Ala His Asn Leu Ala Asn Ala Thr Gly Asn Phe Ser His Met Val
 245 250 255
 Val Ala Glu Glu Lys Ala Gln Leu Gln Gly Glu Pro Asp Ala Ala Ala
 260 265 270
 Glu Ala Phe Cys Thr Pro Ser Tyr Phe Thr Leu Asn Ser Gln Thr Ala
 275 280 285
 Tyr Thr Ile Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val
 290 295 300
 Leu Pro Ile Tyr Thr Glu Leu Lys Asp Pro Ser Lys Arg Lys Met Gln
 305 310 315 320
 His Ile Ser Asn Leu Ser Ile Ala Val Met Tyr Val Met Tyr Phe Leu
 325 330 335
 Ala Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Asp Gly Val Glu Ser Glu
 340 345 350
 Leu Leu His Thr Tyr Ser Lys Val Asp Pro Phe Asp Val Leu Ile Leu
 355 360 365
 Cys Val Arg Val Ala Val Leu Ile Ala Val Thr Leu Thr Val Pro Ile
 370 375 380
 Val Leu Phe Pro Val Arg Arg Ala Ile Gln Gln Met Leu Phe Gln Asn
 385 390 395 400
 Gln Glu Phe Ser Trp Leu Arg His Val Leu Ile Ala Thr Gly Leu Leu
 405 410 415
 Thr Cys Ile Asn Leu Leu Val Ile Phe Ala Pro Asn Ile Leu Gly Ile

Phe	Gly	Ile	420	Ile	Gly	Ala	Thr	Ser	425	Ala	Pro	Cys	Leu	Ile	430	Phe	Ile	Phe
Pro	Ala	Ile	435	Phe	Tyr	Phe	Arg	Ile	440	Met	Pro	Thr	Asp	Lys	445	Glu	Pro	Ala
Arg	Ser	Thr	450	Pro	Lys	Ile	455	Leu	Ala	Leu	Cys	Phe	Ala	460	Ala	Val	Gly	Phe
Leu	Leu	Met	465	Thr	Met	470	Ser	Leu	Ser	Phe	Ile	475	Ile	490	Asp	Trp	Val	480
Gly	Thr	Ser	485	Gln	His	Gly	Gly	Asn	His	500	505							

<210> 6
 <211> 504
 <212> PRT
 <213> Rattus norvegicus

<400> 6
 Met Glu Ile Pro Arg Gln Thr Glu Met Val Glu Leu Val Pro Asn Gly
 1 5 10 15
 Lys His Leu Glu Gly Leu Leu Pro Val Gly Met Pro Thr Ala Asp Thr
 20 25 30
 Gln Arg Ala Glu Asp Ala Gln His Cys Gly Glu Gly Lys Gly Phe Leu
 35 40 45
 Gln Gln Ser Ser Ser Lys Glu Pro His Phe Thr Asp Phe Glu Gly Lys
 50 55 60
 Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile Met Gly
 65 70 75 80
 Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala Asn Thr Gly Ile Ile
 85 90 95
 Leu Phe Leu Phe Leu Leu Thr Ala Val Ala Leu Leu Ser Ser Tyr Ser
 100 105 110
 Ile His Leu Leu Leu Lys Ser Ser Gly Ile Val Gly Ile Arg Ala Tyr
 115 120 125
 Glu Gln Leu Gly Tyr Arg Ala Phe Gly Thr Pro Gly Lys Leu Ala Ala
 130 135 140
 Ala Leu Ala Ile Thr Leu Gln Asn Ile Gly Ala Met Ser Ser Tyr Leu
 145 150 155 160
 Tyr Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gln Thr Phe Leu Asn
 165 170 175
 Leu Glu Lys Pro Thr Pro Val Trp Trp Met Asp Gly Asn Tyr Leu Val
 180 185 190
 Ile Leu Val Ser Val Ile Ile Ile Leu Pro Leu Ala Leu Met Arg Gln
 195 200 205
 Leu Gly Tyr Leu Gly Tyr Ser Ser Gly Phe Ser Leu Ser Cys Met Val
 210 215 220
 Phe Phe Leu Ile Ala Val Ile Tyr Lys Lys Phe Gln Val Pro Cys Pro
 225 230 235 240
 Leu Ala His Asn Leu Val Asn Ala Thr Gly Asn Phe Ser His Met Val
 245 250 255
 Val Val Glu Glu Lys Ser Gln Leu Gln Ser Glu Pro Asp Thr Ala Glu
 260 265 270
 Ala Phe Cys Thr Pro Ser Tyr Phe Thr Leu Asn Ser Gln Thr Ala Tyr
 275 280 285
 Thr Ile Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val Leu
 290 295 300
 Pro Ser Tyr Thr Glu Leu Lys Asp Pro Ser Lys Arg Lys Met Gln His
 305 310 315 320
 Ile Ser Asn Leu Ser Ile Ala Val Met Tyr Val Met Tyr Phe Leu Ala
 325 330 335
 Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Asp Gly Val Glu Ser Glu Leu
 340 345 350
 Leu His Thr Tyr Ser Lys Val Asp Pro Phe Asp Val Leu Ile Leu Cys
 355 360 365
 Val Arg Val Ala Val Leu Ile Ala Val Thr Leu Thr Val Pro Ile Val
 370 375 380
 Leu Phe Pro Val Arg Arg Ala Ile Gln Gln Met Leu Phe Gln Asn Gln
 385 390 395 400
 Glu Phe Ser Trp Leu Arg His Val Leu Ile Ala Thr Gly Leu Leu Thr

Cys Ile Asn Leu 405 Val Ile Phe Ala 410 Pro Asn Ile Leu Gly 415 Phe
 Gly Ile Ile 420 Gly Ala Thr Ser Ala 425 Pro Cys Leu Ile Phe 430 Ile Phe Pro
 Ala Ile Phe Tyr Phe Arg Ile 440 Met Pro Thr Glu Lys 445 Glu Pro Val Arg
 Ser Thr Pro Lys Ile Leu Ala Leu Cys Phe Ala 460 Val Gly Phe Leu
 465 Leu Met Thr Met Ser 470 Leu Ser Phe Ile Ile 475 Thr Asp Trp Val Ser Gly
 Thr Ser Gln His 485 Gly Gly Asn His 490 495

<210> 7
 <211> 504
 <212> PRT
 <213> Homo sapiens

<400> 7
 Met Glu Ala Pro Leu Gln Thr Glu Met Val Glu Leu Val Pro Asn Gly
 1 5 10 15
 Lys His Ser Glu Gly Leu Leu Pro Val Ile Thr Pro Met Ala Gly Asn
 20 25 30
 Gln Arg Val Glu Asp Pro Ala Arg Ser Cys Met Glu Gly Lys Ser Phe
 35 40 45
 Leu Gln Lys Ser Pro Ser Lys Glu Pro His Phe Thr Asp Phe Glu Gly
 50 55 60
 Lys Thr Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile Met
 65 70 75 80
 Gly Ser Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala Asn Thr Gly Ile
 85 90 95
 Ile Leu Phe Leu Phe Leu Leu Thr Ala Val Ala Leu Leu Ser Ser Tyr
 100 105 110
 Ser Ile His Leu Leu Lys Ser Gly Val Val Gly Ile Arg Ala
 115 120 125
 Tyr Glu Gln Leu Gly Tyr Arg Ala Phe Gly Thr Pro Gly Lys Leu Ala
 130 135 140
 Ala Ala Leu Ala Ile Thr Leu Gln Asn Ile Gly Ala Met Ser Ser Tyr
 145 150 155 160
 Leu Tyr Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gln Thr Phe Leu
 165 170 175
 Asn Leu Glu Glu Lys Thr Ser Asp Trp Tyr Met Asn Gly Asn Tyr Leu
 180 185 190
 Val Ile Leu Val Ser Val Thr Ile Ile Leu Pro Leu Ala Leu Met Arg
 195 200 205
 Gln Leu Gly Tyr Leu Gly Tyr Ser Ser Gly Phe Ser Leu Ser Cys Met
 210 215 220
 Val Phe Phe Leu Ile Ala Val Ile Tyr Lys Lys Phe His Val Pro Cys
 225 230 235 240
 Pro Leu Pro Pro Asn Phe Asn Asn Thr Thr Gly Asn Phe Ser His Val
 245 250 255
 Glu Ile Val Lys Glu Lys Val Gln Leu Gln Val Glu Pro Glu Ala Ser
 260 265 270
 Ala Phe Cys Thr Pro Ser Tyr Phe Thr Leu Asn Ser Gln Thr Ala Tyr
 275 280 285
 Thr Ile Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val Leu
 290 295 300
 Pro Ile Tyr Thr Glu Leu Lys Asp Pro Ser Lys Lys Lys Met Gln His
 305 310 315 320
 Ile Ser Asn Leu Ser Ile Ala Val Met Tyr Ile Met Tyr Phe Leu Ala
 325 330 335
 Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Asn Gly Val Glu Ser Glu Leu
 340 345 350
 Leu His Thr Tyr Ser Lys Val Asp Pro Phe Asp Val Leu Ile Leu Cys
 355 360 365
 Val Arg Val Ala Val Leu Thr Ala Val Thr Leu Thr Val Pro Ile Val
 370 375 380
 Leu Phe Pro Val Arg Arg Ala Ile Gln Gln Met Leu Phe Pro Asn Gln

385 390 395 400
 Glu Phe Ser Trp Leu Arg His Val Leu Ile Ala Val Gly Leu Leu Thr
 405 410 415
 Cys Ile Asn Leu Leu Val Ile Phe Ala Pro Asn Ile Leu Gly Ile Phe
 420 425 430
 Gly Val Ile Gly Ala Thr Ser Ala Pro Phe Leu Ile Phe Ile Phe Pro
 435 440 445
 Ala Ile Phe Tyr Phe Arg Ile Met Pro Thr Glu Lys Glu Pro Ala Arg
 450 455 460
 Ser Thr Pro Lys Ile Leu Ala Leu Cys Phe Ala Met Leu Gly Phe Leu
 465 470 475 480
 Leu Met Thr Met Ser Leu Ser Phe Ile Ile Ile Asp Trp Ala Ser Gly
 485 490 495
 Thr Ser Arg His Gly Gly Asn His
 500

<210> 8
 <211> 476
 <212> PRT
 <213> Homo sapiens

<400> 8
 Met Glu Leu Gln Asp Pro Lys Met Asn Gly Ala Leu Pro Ser Asp Ala
 1 5 10 15
 Val Gly Tyr Arg Gln Glu Arg Glu Gly Phe Leu Pro Ser Arg Gly Pro
 20 25 30
 Ala Pro Gly Ser Lys Pro Val Gln Phe Met Asp Phe Glu Gly Lys Thr
 35 40 45
 Ser Phe Gly Met Ser Val Phe Asn Leu Ser Asn Ala Ile Met Gly Ser
 50 55 60
 Gly Ile Leu Gly Leu Ala Tyr Ala Met Ala His Thr Gly Val Ile Phe
 65 70 75 80
 Phe Leu Ala Leu Leu Cys Ile Ala Leu Ser Ser Tyr Ser Ile
 85 90 95
 His Leu Leu Leu Thr Cys Ala Gly Ile Ala Gly Ile Arg Ala Tyr Glu
 100 105
 Gln Leu Gly Gln Arg Ala Phe Gly Pro Ala Gly Lys Val Val Val Ala
 115 120 125
 Thr Val Ile Cys Leu His Asn Val Gly Ala Met Ser Ser Tyr Leu Phe
 130 135 140
 Ile Ile Lys Ser Glu Leu Pro Leu Val Ile Gly Thr Phe Leu Tyr Met
 145 150 155
 Asp Pro Glu Gly Asp Trp Phe Leu Lys Gly Asn Leu Leu Ile Ile Ile
 165 170 175
 Val Ser Val Leu Ile Ile Leu Pro Leu Ala Leu Met Lys His Leu Gly
 180 185 190
 Tyr Leu Gly Tyr Thr Ser Gly Leu Ser Leu Thr Cys Met Leu Phe Phe
 195 200 205
 Leu Val Ser Val Ile Tyr Lys Lys Phe Gln Leu Gly Cys Ala Ile Gly
 210 215 220
 His Asn Glu Thr Ala Met Glu Ser Glu Ala Leu Val Gly Leu Pro Ser
 225 230 235 240
 Gln Gly Leu Asn Ser Ser Cys Glu Ala Gln Met Phe Thr Val Asp Ser
 245 250 255
 Gln Met Ser Tyr Thr Val Pro Ile Met Ala Phe Ala Phe Val Cys His
 260 265 270
 Pro Glu Val Leu Pro Ile Tyr Thr Glu Leu Cys Arg Pro Ser Lys Arg
 275 280 285
 Arg Met Gln Ala Val Ala Asn Val Ser Ile Gly Ala Met Phe Cys Met
 290 295 300
 Tyr Gly Leu Thr Ala Thr Phe Gly Tyr Leu Thr Phe Tyr Ser Ser Val
 305 310 315 320
 Lys Ala Glu Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu
 325 330 335
 Cys Val Arg Leu Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro Val
 340 345 350
 Val Leu Phe Pro Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly
 355 360 365
 Lys Ala Phe Ser Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu

370	375	380
Val Leu Val Asn Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp Ile		
385	390	400
Phe Gly Val Ile Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile Leu		
405	410	415
Pro Ser Ile Phe Tyr Leu Arg Ile Val Pro Ser Glu Val Glu Pro Phe		
420	425	430
Leu Ser Trp Pro Lys Ile Gln Gly Cys Gln Ala Trp Ile Met Ala Leu		
435	440	445
Ile Pro Thr Pro Thr Pro Trp Glu Glu Glu Glu Glu Glu Glu Glu		
450	455	460
Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Ala		
465	470	475

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